

What is claimed is:

1. A polynucleotide selected from the group consisting of:

(a) a polynucleotide comprising a protein-coding region of the
5 nucleotide sequence according to any one of SEQ ID NOs: 1-2188
and SEQ ID NOs: 4377-4683;

(b) a polynucleotide comprising the nucleotide sequence encoding
a polypeptide that comprises the amino acid sequence of any one
of SEQ ID NOs: 2189-4376 and SEQ ID NOs: 4684-4990;

10 (c) a polynucleotide comprising a nucleotide sequence encoding a
polypeptide, which comprises the amino acid sequence selected
from SEQ ID NO: SEQ ID NOs: 2189-4376 and SEQ ID NOs: 4684-4990
wherein one or more amino acids have been substituted, deleted,
inserted, and/or added, and which is functionally equivalent to
15 the polypeptide comprising the selected amino acid sequence as
described above;

(d) a polynucleotide which hybridizes to a polynucleotide
comprising the nucleotide sequence selected from SEQ ID NOs: 1-
2188 and SEQ ID NOs: 4377-4683, and which comprises the
20 nucleotide sequence encoding a polypeptide functionally
equivalent to a polypeptide encoded by the selected nucleotide
sequence as described above;

(e) a polynucleotide comprising a nucleotide sequence encoding a
partial amino acid sequence of a polypeptide encoded by the
25 polynucleotides according to any one of (a)-(d);

(f) a polynucleotide comprising a nucleotide sequence having at
least 70% identity to the nucleotide sequence of any one of SEQ
ID NOs: 1-2188 and SEQ ID NOs: 4377-4683; and

30 (g) a polynucleotide comprising a nucleotide sequence having at
least 90% identity to the nucleotide sequence of any one of SEQ
ID NOs: 1-2188 and SEQ ID NOs: 4377-4683.

2. A polypeptide encoded by the polynucleotide according to
claim 1, or a partial peptide thereof.

3. An antibody which binds to the polypeptide or the peptide according to claim 2.

4. An immunoassay method for the polypeptide or the peptide according to claim 2, which comprises the steps of:

- (a) contacting the polypeptide or the peptide according to claim 2 with the antibody according to claim 3; and
- (b) observing the binding between the two.

5. A vector comprising the polynucleotide according to claim 1.

6. A transformant comprising the polynucleotide according to claim 1 or the vector according to claim 5.

7. A transformant which comprises the polynucleotide according to claim 1 or vector according to claim 5 in an expressible manner.

8. A method for producing the polypeptide or the peptide according to claim 2, which comprises the steps of:

- (a) culturing the transformant according to claim 7; and
- (b) recovering the expression product.

9. An oligonucleotide comprising 15 or more nucleotides, which comprises the nucleotide sequence according to any one of SEQ ID NOs: 1-2188 and SEQ ID NOs: 4377-4683, or a nucleotide sequence complementary to the complementary strand thereof.

10. A primer for synthesizing a polynucleotide, which comprises the oligonucleotide according to claim 9.

11. A probe for detecting a polynucleotide, which comprises the oligonucleotide according to claim 9.

12. A polynucleotide according to any one of:

(a) an antisense polynucleotide comprising a nucleotide sequence complementary to the transcript of the polynucleotide according to claim 1;

5 (b) a polynucleotide with the ribozyme activity for specifically cleaving the transcript of the polynucleotide according to claim 1; and

(c) a polynucleotide which downregulates the expression of the polynucleotide of claim 1 due to RNAi activity in a host cell.

10 13. A method for detecting the polynucleotide according to claim 1, which comprises the steps of:

(a) incubating a target polynucleotide with the oligonucleotide according to claim 9 under conditions ensuring hybridization; and

15 (b) detecting the hybridization between the target polynucleotide and the oligonucleotide according to claim 9.

20 14. A database of polynucleotides and/or polypeptides, which comprises information on at least one of the nucleotide sequences of SEQ ID NOs: 1-2188 and SEQ ID NOs: 4377-4683 and/or on at least one of the amino acid sequences of SEQ ID NOs: 2189-4376 and SEQ ID NOs: 4684-4990.